line 7, replace the heading with the following new heading:

1. Field of the Invention

line 18, replace the heading with the following new heading:

2. Description of the Related Art

replace the paragraph beginning at line 27 with the following paragraph:

Fructooligosaccharides are found in plants, such as asparagus, onion, Jerusalem-artichoke and honey. They are also synthesized from sucrose by the newly industrialized mass production technique using fructosyltransfer reaction which is catalyzed by a β-fructofuranosidase derived from a microorganism. However, as β-fructofuranosidase preparations which are currently used for the industrial production of fructooligosaccharides is a cell-bound β-fructofuranosidase derived from Aspergillus niger. They contain a relatively large proportion of proteins as impurities. Therefore, a need still exists for a high-purity β-fructofuranosidase preparation with little unwanted proteins and a high titer. Further, an extracellular β-fructofuranosidase is desired in an attempt to improve efficiently by using it in a fixed form, as an extracellularly available enzyme is more suitable for fixation.

Page 4, replace the paragraph beginning at line 6 with the following paragraph:

In consideration of the above, some of the inventors have proposed an industrial process for producing crystal 1-kestose from sucrose (Japanese Patent Application No. 64682/1996, Japanese Patent Application No. 77534/1996, and Japanese Patent Application No. 77539/1996). According to this process, a β-fructofuranosidase harboring fructosyltransferase activity is first allowed to act on sucrose to produce 1-kestose; the resultant 1-kestose is

fractionated to a purity of 80% or higher by chromatographic separation; then, using this fraction as a crystallizing sample, crystal 1-kestose is obtained at a purity of 95% or higher. The β-fructofuranosidase harboring fructosyltransferase activity used in this process should be able to produce 1-kestose from sucrose at a high yield while minimizing the byproduct nystose, which inhibits the reactions in the above steps of chromatographic separation and crystallization. In the enzyme derived from Aspergillus niger, which is currently used for the industrial production of fructooligosaccharide mixtures, the 1-kestose yield from sucrose is approximately 44%, while 7% is turned to nystose (Japanese Patent Application No. 64682/1996). These figures suggest that the enzyme has room for improvement in view of the industrial production of crystal 1-kestose. As a next step, new enzymes having more favorable characteristics were successfully screened from Penicillium roqueforti and Scopulariopsis brevicaulis. These enzymes were able to turn 47% and 55% of sucrose into 1-kestose, respectively, and 7% and 4% to nystose (Japanese Patent Application No. 77534/1996, and Japanese Patent Application No. 77539/1996). Although these figures show that the new enzymes were superior to the enzyme derived from Aspergillus niger for higher 1-kestose yields and less nystose production from sucrose, the productivity and stability of the enzymes were yet to be improved. Thus, it is awaited to see a new enzyme that maintains the productivity and stability of the enzyme derived from Aspergillus niger, which is currently used for the industrial production of fructooligosaccharide mixtures, while achieving a sucrose-to-1-kestose yield comparable or superior to that of the enzymes derived from Penicillium roqueforti and Scopulariopsis brevicaulis.

Page 7, line 14, replace the heading with the following new heading:

Description of the Preferred Embodiments

Page 13, replace the paragraph beginning at line 14 with the following paragraph:

carrying out PCR process on the primer using a sample which presumably contains a β-fructofuranosidase gene as a template, and

Page 17, replace the paragraph beginning at line 36 with the following paragraph:

The mold fungus according to the present invention may preferably be used for producing recombinant β-fructofuranosidase. More specifically, a DNA fragment encoding β-fructofuranosidase is introduced into the mold fungus according to the present invention in the form of a DNA molecule which is replicable in the host cell according to the present invention and can express the gene, particularly an expression vector, in order to transform the mold fungus. The transformant has then the ability to produce the recombinant β-fructofuranosidase and no other β-fructofuranosidase enzymes.

Page 21, replace the paragraph beginning at line 35 with the following paragraph:

The β-fructofuranosidase variant according to the fourth aspect of the present invention may be produced in a host cell by introducing a DNA fragment encoding β-fructofuranosidase in the host cell in the form of a DNA molecule which is replicable in the host cell and can express the gene, particularly an expression vector, in order to transform the host cell.

Page 23, between lines 35 and 36 insert the following: